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REPORT

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COVER: A salute to the Marine Corps on its 199th Anniversary. Depicted (top to bottom) are USMC amphibious assaults: 1917 with an armored car, 1963 from an open Landing Craft Vehicle Personnel (LCVP) and 1974 from the new Landing Vehicle Tracked Personnel (LVTP-7).

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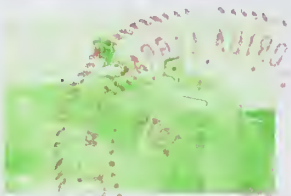

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BICENTENNIAL BITS

(FALL 1774): With the exception of Delaware, states are commissioning their own privateer navies by issuing letters of marque and reprisal. In most cases, these ships have "marines" of some sort aboard. These "sea soldiers" are used to shoot sailors or marines from the decks or rigging of enemy war vessels. They also may board and capture British ships. Marine applicants in Massachusetts are required to have "a good Fire Arm, Cartouch Box, Cutlass and Blanket." Other states arm them with bayonets, pikes, lances, hatchets and Indian tomahawks. Marines took part in the unsuccessful Penobscot Expedition and are with the fleet that Benedict Arnold is forming on Lake Champlain.

Who Conducts The Naval Air Symphony?

by t.d. stphens

photos by d. g. francis

He's alone. He's already come thousands of miles, and the fog has him boxed in tighter than a kite. There are miles and miles of land and sea below him, and miles and miles of fog!

Now what?

Well, if he's a Navy pilot and his destination is the Naval Air Station North Island, San Diego, California, he really has no worries.

In fact, he can be headed for most any airport or airfield in the U.S. or abroad, and he has no worries. That is, not as long as he has a radio in his aircraft and an air traffic controller (ATC) on the ground to give him instructions.

For the Navy Air Traffic Controller, it all starts at Glencoe, Georgia, where, in 12 weeks, the Navy turns a promising prospect into a genuine controller with the basic knowledge to start on a career that is really rewarding, especially when you watch an aircraft taxi down the runway after just being lost somewhere up in the not-so-blue sky.

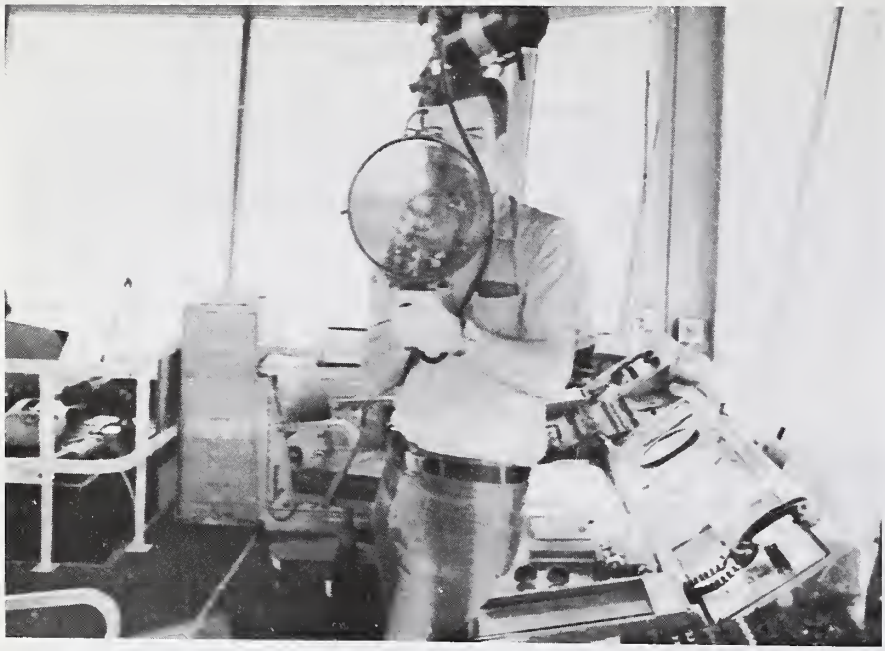
The Navy has air traffic controllers located at all Naval Air Stations around the free world. Most are just ordinary people that really had no inkling of what ATC personnel did prior to their enlistment in the Navy. Their paths just happened to cross with the old standby used so many times by personnel assignment people: "The needs of the service. . ."

But after spending some time with ATC, it sort of grows on you. In fact, the field is no place for a person that can't or won't meet the challenge.

In ATC, lives depend upon the calm, cool and collected person in the tower. An incorrect instruction or a bit of panic at the wrong time can lead not only to the death of the pilot, but, if he hits the ground in the middle of a residential or commercial area, well. . . . .!

Pilots contact controllers for landing instructions. (u.s. navy photo)

Controller prepares to assist incoming aircraft.



Light beam device is used to signal aircraft with faulty radios.

Controller's home - a Naval air station tower.

But, thankfully, this is only one of several occurancies which could happen. It doesn't - - and hopefully, won't. The Navy uses the strongest screening possible in the selection of ATC personnel.

Hearing must be within certain limits. After all, radio contact is not all that good at times, and a person with a hearing deficiency might not catch a transmission from a pilot in a critical situation.

Sight must be excellent. Enunciation must be good, but is not a criteria for selection.

From the control tower, an ATC man or woman (and there are many women qualified in the Navy) can see for miles on a clear day and usually observe the plane he or she is controlling. However, a panoramic view of the skies must be taken in order to maintain awareness of other aircraft in the area. This helps to prevent problems.

Ever enter a big airport and watch the jets coming and going? It's a good thing someone is acting as a traffic cop. When you put them all together -- planes landing, taking off, taxiing, being pulled from one area to another by tractors, crash trucks sitting by or moving near the runways - - they add up to an extensive job for a few people to handle. Everything that moves on or near any of the taxiways or runways must be known to the controllers.

During foul weather, radar approach control is used to bring aircraft in for safe landing.

Listening in on the conversations in a tower, all at the same time, is like listening to several singing groups at once, each in a different key, with a different song. But to ATC personnel, it is just so much music. Each controller tunes in on his particular "song" and allows the rest just to go on around him. Each has his own "instrument" or "part" and, as long as he keeps in harmony with the rest, it's beautiful music.

Air station operations are like a great orchestra performing a sonata in blue. In this case it's Navy blue and the orchestra conductor is the air traffic controller.

Comminications is maintained with air station operations section.

The air traffic controller is the person responsible for ensuring that all aircraft make it safely home.

Weather I'm Right Or Wrong

by d.m. ryan

photos by t.d. stephens

"Sunny and cooler today with a high of 55 degrees and a low of 43 degrees. Westerly winds 8 to 15 mph, gusting at 20. Ceiling unlimited, no precipitation expected for the next 24 hours."

A weather report may not be the most exciting event in the day, but if you fly an F-106 or F-4, it is as important as the stock market quotes are to a broker. For a pilot, the weatherman is one of his most relied on compatriots next to his crew.

The Air Force counts heavily on the accuracy of its weather forecasts. Safety of the aircraft and lives of crew depend on the information gathered by the weathermen. Due to an extensive, world-wide area of responsibility, the Air Force operates weather stations on several continents. Only the latest and most scientific equipment is used.

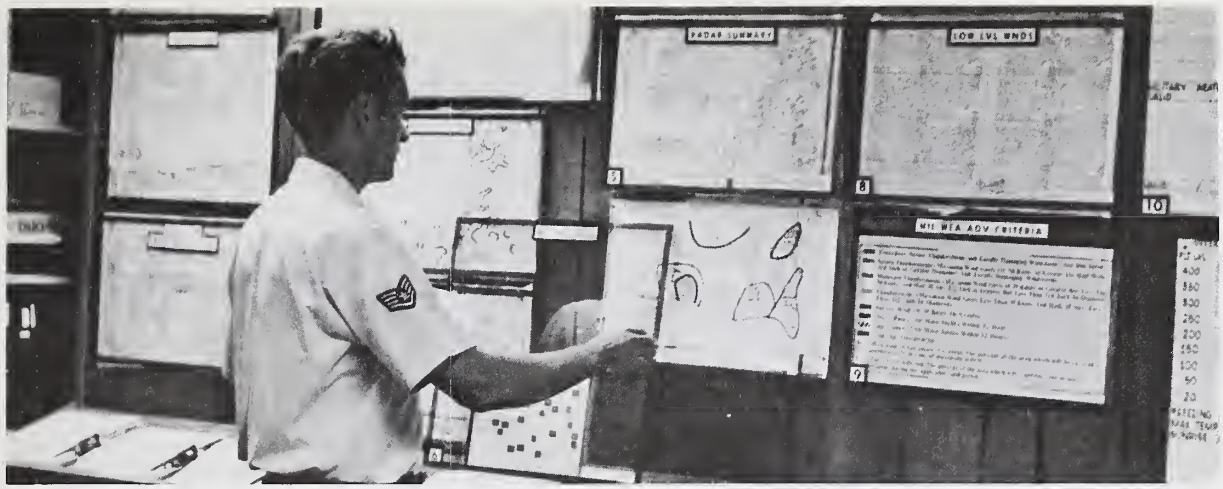
Wetting a finger and holding it to the breeze while looking skyward is not the Air Force method of prognosticating the weather. Observers are trained at Chanute Air Force Base, Illinois, for 14 weeks in the skills of making visual sky readings and checking barometers and electrical weather equipment which will tell visibility and ceiling data. These observers announce the weather as it is now.

Forecasters work in a more difficult field. They must inform air traffic control towers and commanders of what the weather will be in the short-range future. To help them better prepare for such a mission, the Air Force offers a nine month course for enlisted people at Chanute AFB. Officer forecasters attend meteorology courses at civilian colleges.

In predicting the weather, a forecaster takes local data, satellite pictures, reports from local stations, his knowledge of weather trends and patterns for his area and meshes it all

Keeping updated on wind conditions is only part of a weatherperson's responsibilities.

All data must be recorded in the proper journal.



Myriads of maps and charts must be posted for future reference.

together. The result is -- three days of rain.

Of course the forecast or prediction is predicted on the assumption that Mother Nature will act according to rules. This usually does not happen. Hence, the weatherman must be constantly alert for changes and shifts in conditions in order to notify the necessary people. One mistake or oversight could cost lives and millions of dollars worth of equipment.

The term "weatherman" has been used constantly, but in the Air Force it might better be weatherperson. Many women participate in this field. Qualities needed include considerable dexterity, normal color perception and above average visual acuity. A background or interest in meteorology, physics, math and geography is helpful in becoming a weatherperson.

It is not unusual to find well trained Air Force weather teams working at other than Air Force bases. They are often assigned to Army posts to provide weather data for soldier pilots. An example is the team located at the Godman Army Airfield, Ft Knox, Kentucky.

Unlike the TV commercial, Air Force pilots cannot always fly friendly skies. To ensure that the mission can be accomplished with minimum risk to lives and aircraft, the US Air Force looks to its weatherpeople.

"Red skies at night, pilots delight. Red skies at morning, pilots take warning." If only it was that simple!

ABOVE: A forecaster relies on electrically produced data.

LEFT: Before a morning flight, pilots check with weatherman. (U.S. Air Force Photo)

A Military Reptile
The Marine Amphi

LVTP-7 (Landing Vehicle, Tracked, Personnel) amphibian tractor, newest of the Corps' amphibious landing vehicles, comes up from the water at Camp Lejeune, North Carolina. The "amtrac" can be used in water with a speed of about eight and a half miles per hour, or on land at 40-plus mph.

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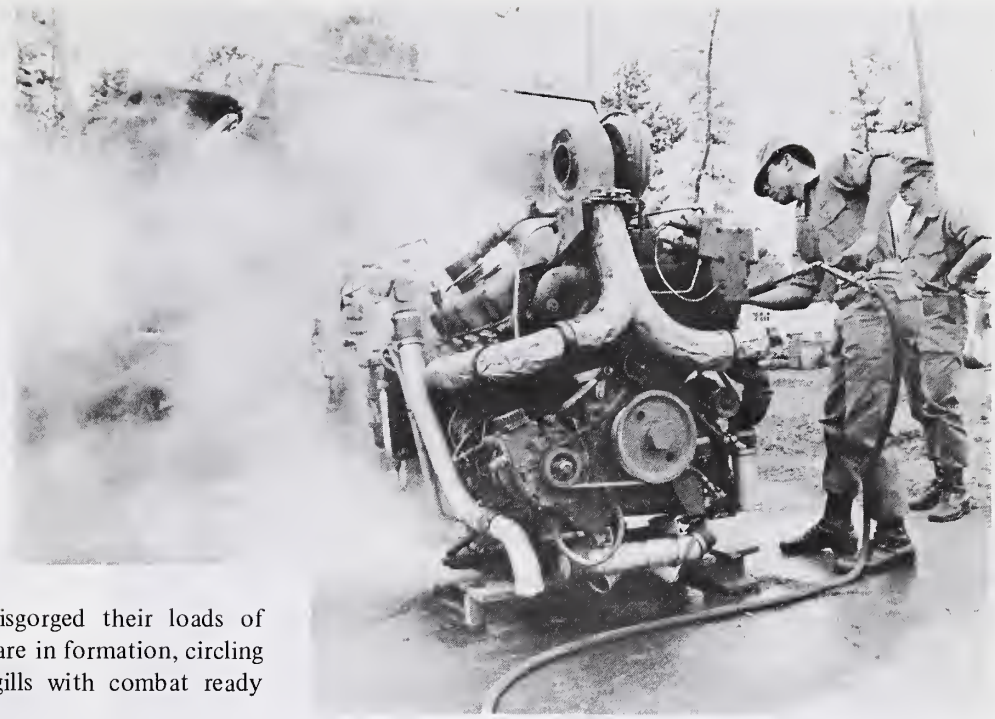


by t. d. stephens

The LSTs and LSDs have disgorged their loads of Marines and machines. The LVTs are in formation, circling near the beach, loaded to the gills with combat ready Marines.

Then comes the order to land - and the vehicles head for the beach, to lumber up from the water, drop a ramp and pour forth a battalion of Marines, guns blazing, fighting to push back an enemy force and establish a beachhead.

A late-night rerun of John Wayne's "Sands of Iwo Jima"? No, just another day in the life of a man trained in the art of amphibious warfare. The "LSTs" and "LSDs" are small ships used for transportation of men and equipment. The LVTs are for extremely close-in-work, small by comparison to ships because they aren't ships. Their military nomenclature is "Landing Vehicles, Tracked."

Steam cleaning is needed on a regular basis to keep rust and corrosion from disabling the monstrous power plant.

The LVTs have been in use since World War II, although of a much less sophisticated make than today's machine.

Marines have been the amphibious landing force of the United States since 1775. And today, they are better trained and better equipped than ever before.

Take today's Marine for example.

He is physically in better shape than ever. The Corps' physical fitness program makes sure he stays that way. Daily or weekly physical training keeps mind and legs in condition for long runs. Pullups and situps help keep muscles toned.

Equipment-wise, the Corps is also in top shape. The M-16 rifle is fine for the close-in fighting encountered in combat during the last decade. Mechanical equipment is the best: aircraft have progressed to the point of the newest AV8A Harrier, the only operational vertical/short takeoff and landing aircraft; trucks and jeeps are of new design and capability.

The new LVTs are in the same category. They are lighter, faster, more versatile. Their capabilities are vastly superior to former models.

LVTs are the back bone of the amphibious operation. The heavily armored, fairly swift, behemoths can churn

LEFT: Leadership characteristics are found in young crew chiefs and section leaders.

BELOW: The cockpit of an amtrac is neatly put together; compact. Over the driver's head is the turret, surrounded by small windows to provide visibility with the hatch closed.

RIGHT TOP: The LVTP7 will seat 25 combat-equipped Marines, plus provide space for crew-served weapons and ammunition.

RIGHT BOTTOM: Even LVTPs sometime break, and when something that big breaks, it takes something just as big, or bigger, to handle repairs -- thus, the LVT retriever.

through almost any surf, grind up onto the beach, drop a front ramp weighing a ton and allow over a squad of combat armed Marines to charge out, ready for immediate contact with the enemy.

The size of the vehicle and its thick skin allow for protection that is not usually available to landing troops. The LVTs are covered with steel plating to protect their load of men from overhead fire. Mortars and other explosives don't readily drop into the vehicle as happened all to often during WW II landing operations.

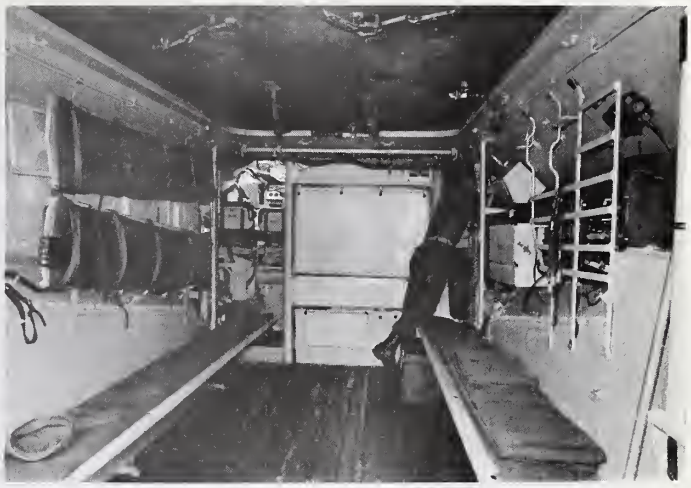
Four weeks of schooling usually gives an "AmTracker" the basic knowledge needed to get him off to a good start with an Amphibian Tractor Battalion in the Marine Corps. But, just as in most jobs, training is never completed. Even after being around the tractors for many years, there is always something new to learn. The "tracs" are big, they have a lot of internal workings and require much maintenance and upkeep by the crew.

When the tractor has been run in salt water, a good fresh water bath is in order to prohibit rust and corrosion from

occuring. Large diesel engines have to be checked and maintained, hulls painted, broken tracks fixed. It's a never ending job, but a rewarding one.

From radio operator or driver to crew chief, or section leader, every man has his job, and as long as he performs up to par, he is a part of the Marine team. He and his tractor, are the link that gets Marines ashore when the time comes. He knows he's done a good job when a successful amphibious assault takes place.

As the landing is the backbone of Marine operations, so the LVT and crew are the backbone of the landing. The combination makes for a professional, winning Marine Corps team.



Crewmen Of The Iron Monsters

by d. m. ryan

photos by r.b. redmon

"Gunner!"
"SABOT!"
"Moving tank!"
"Traverse left ..... steady ..... ON!"
"One four hundred!"
"At my command.....FIRE!"

The fire command places a tank into action. However, it takes a well organized training program to ensure that the vehicle's crew is able to implement the order. This is the purpose of armor crewman advanced individual training (AIT).

A tank crew consists of four men. The driver's mission is self-explanatory. The gunner must be able to operate sighting equipment, the tank's computer and the main gun firing system. The loader has the job of selecting and loading the correct ammunition into the main gun. And, the tank commander (a sergeant) is responsible for the successful performance of his crew and vehicle.

These armor crewman positions and procedures are learned by the trainees during AIT. To ensure that quality training is received in connection with today's highly sophisticated tanks, special devices are used throughout the education process. The first such piece of equipment encountered is the tank driver's trainer.

The trainer simulates a tank driver's compartment and controls. An instructor uses his panel to check a student's performance during training and can electrically insert situations into the device. For example, the trainer can simulate mechanical problems, river fordings, steep grades and muddy terrain. After three hours in this machine, the student is ready to face the real test - an M60A1 tank on a driving course.

During another phase of AIT, the soldier is introduced to the burst on target gunnery trainer. This device is designed to teach the art of locating, ranging and firing on a target, then readjusting for a miss and firing again. Using a 35mm slide system, targets are made to appear on a master screen and in the gunner's periscope. Normal crew drill can be practiced by a three man group in a classroom environment. An instructor can change the target and control the strike of the student's fired round by using his control panel.

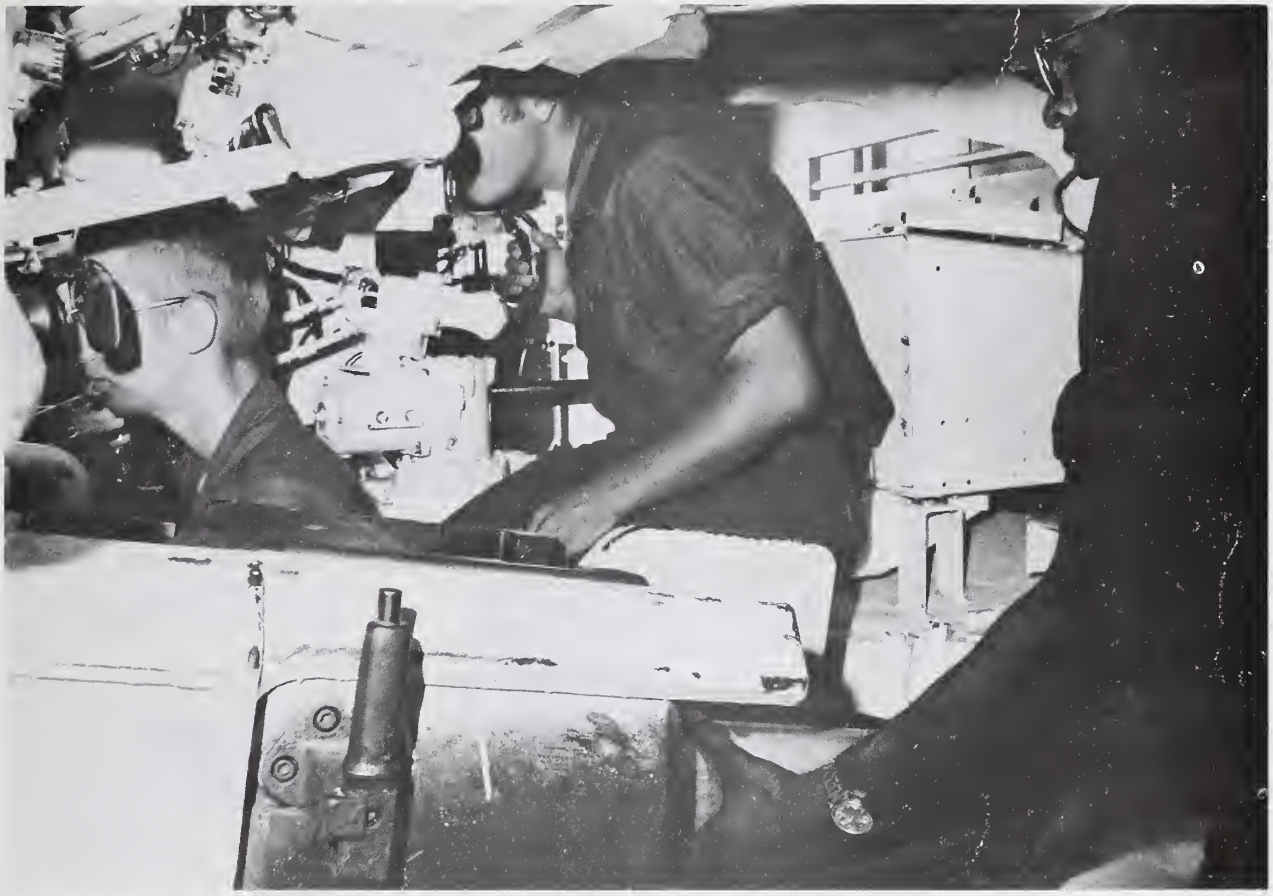
Instructor explains the burst on target trainer.

In order to teach the fundamentals of gunnery for the M551 Airborne Assault/Armored Reconnaissance Vehicle (Sheridan), training on a special gunner's trainer is necessary. This device incorporates closed circuit TV with a Sheridan model turret. Targets on film appear in the gunner's periscope and the student must track, range on and engage the enemy vehicle. A control panel enables the instructor to monitor the picture and affect speed and direction of the filmed tanks. Three student crewmen can practice in this device at once.

Upon completion of training, student crews take actual tanks to target ranges for live fire exercises. Additionally, some instruction will be

Students become familiar with tank driver's trainer.

Closed circuit TV is used on the M551 trainer.



Student gunner (left) and tank commander range on target while loader prepares to chamber a round during M60A1 crew drills.

received on basic maintenance and trouble shooting for the vehicles and their systems.

After AIT, the new armor crewmen receive assignments to units throughout the U.S. and world. However, under a new experimental program, complete four man crews are being trained and assigned together. These teams are receiving instruction at Forts Hood and Knox for duty with M60A2 tank units in Germany. Upon arrival there, they will remain together for at least a year. If successful, the program will be expanded to cover all tanks and units. The idea is planned to improve operational readiness and soldier morale.

The challenge of serving as an armor crewman is exciting and often difficult. But, the training provided is programed to ensure that AIT graduates are prepared to meet the challenge in an Army of sophisticated armor weaponry.

"At my command .....FIRE!"

"On the way....."

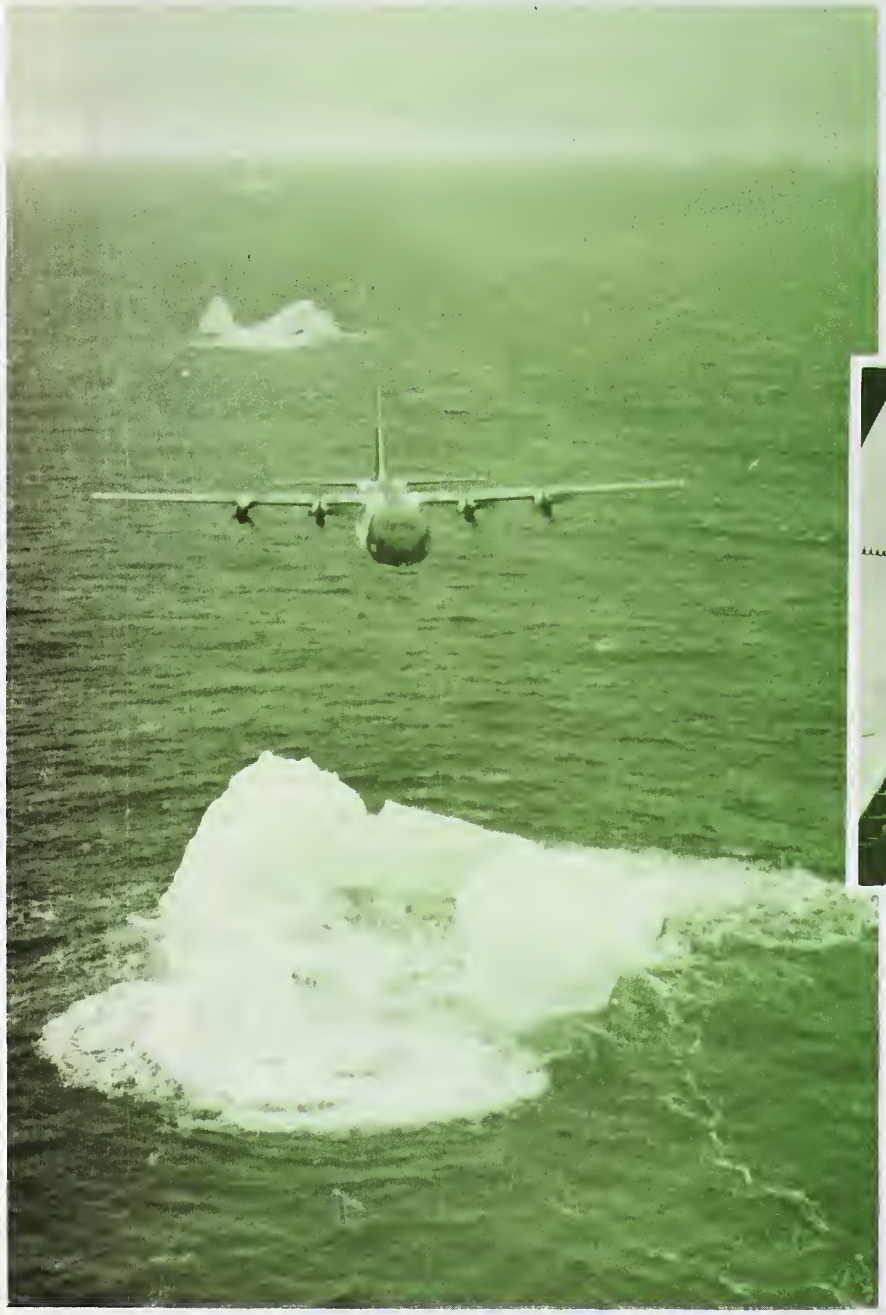
M60A1 tank moves into the attack.

M551 on scout operations (Art by PA3 W. E. Grand, USCG)

Hunting The "Killer" Icebergs

by d. m. ryan

photos courtesy of u.s. coast guard



In order to track, study and mark icebergs, a C-130 hedge-hops a row of them off Labrador.

On a cold, windy night in April 1912, the British liner TITANIC, making her first trans-Atlantic voyage, sank killing 1,517 passengers and crew. The cause - she struck an iceberg!

Due to this disaster, the U.S. and 17 other Maritime nations joined to form the International Ice Patrol. Today, as in the 1914 beginnings, the prime participant in this program is the U.S. Coast Guard. Its job is to study, track and warn vessels about icebergs in the North Atlantic shipping lanes.

A plane crewman drops dye bombs on an iceberg to facilitate later identification and tracking.

The Ice Patrol, headquartered at Governor's Island, New York City, is responsible for an area about the size of Pennsylvania. This stretches from Newfoundland to the American northeastern coast. During the ice season from February to August, hundreds of bergs float into this location. However, in 1974 some 1,400 entered the patrol region, one moving as far south as 900 miles off of the Massachusetts coast.

Under such circumstances, the resources and talents of the Coast Guard are put to the test. Normally, C-130 aircraft based in Canada, close to the

Radarman, aboard a C-130, tracks the movement of North Atlantic icebergs.

ice, are used to spot and observe the icebergs. Three to four reconnaissance flights a week are made. But, when the ice or weather conditions worsen, surface vessels become involved. The cutters may work alone or in conjunction with aircraft. Their primary mission is to warn ships of ice locations. However, there is more to the Ice Patrol job than just watching and reporting.

Extensive studies are made by the Coast Guard marine science technicians. The New London, Connecticut, based oceanographic ship EVERGREEN is one vessel which participates in such operations. Research by her crew covers currents, physical properties of ice, drift, erosion, melting, temperature of air and water near the ice, habits of birds and seals with regard to the ice and navigational information.

Much of the oceanographic data concerning the North Atlantic has been compiled as a result of Coast Guard Ice Patrol studies. Water temperatures are measured to within a thousandth of a degree and salt content to within a millionth of a degree. This scientific information has been used by fisheries resources personnel as well as by foreign oceanographers.

All of the studies enable the Coast Guard to better track the flow of icebergs, determine where each will move and how fast, and when they will melt. In recent years, means of hastening the melting process have been tested. Methods tried included gunfire, mines, depth charges and bombs. However, after all ideas were exhausted, it was found that the easiest and cheapest means was still natural melting.

Patrol planes continue to bomb the icebergs with dyes in order to aid the tracking process. Once data on the berg is complied, it is fed into a computer along with ocean current and weather information. Every twelve hours, the predicted location of the ice monsters are broadcasted from radio stations in the U.S., Canada and Europe to all ships at sea.

Key personnel in the Ice Patrol operation include radarmen, sonar technicians, electrical technicians, aviators, marine science technicians and radiomen. Still, it takes the professional competence of each Coast Guard person to ensure the safety of numerous lives and vessels which travel the ice marred shipping lanes.

Although increasing numbers of icebergs have flowed into the Patrol area during the past three years, not a single ship has been lost. This record is a credit to the U.S. Coast Guard and one which will continue in the hope of avoiding another TITANIC disaster.

A Coast Guardsman on the cutter EVERGREEN plots the location of a sharp pinnacled iceberg during oceanographic studies.

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